CLAIMS:

1. A limited play optical storage media, comprising:

a first substrate;

at least one reflective layer;

a data storage layer disposed between said first substrate and said at least one reflective layer;

a reactive layer comprising at least one reactive material disposed on said at least one reflective layer;

an optically transparent second substrate disposed between the reactive layer and a laser incident surface of the optical storage media; and

an oxygen permeable barrier layer disposed between the reactive layer and a laser incident surface of the optical storage media,

said reactive layer having an initial percent reflectivity of about 50% or greater and a percent reflectivity of about 45% or less after exposure to oxygen.

2. A limited play optical storage media as in claim 1, wherein the oxygen permeable barrier layer is disposed between the reflective layer and the second substrate.

3. A limited play optical storage media as in claim 1, wherein the oxygen permeable barrier layer is disposed between said second substrate and a laser incident surface of the optical storage media.

4. A limited play optical storage media as in claim 1, wherein said first substrate and said second substrate are plastic.

5. A limited play optical storage media as in claim 4, wherein said plastic comprises at least one thermoplastic having a glass transition temperature of about 100° C. or greater.

6. A limited play optical storage media as in claim 5, wherein said thermoplastic is selected from the group consisting of polyvinyl chloride, polyolefins, polyesters, polyamides, polysulfones, polyimides, polyetherimides, polyether sulfones, polyphenylene sulfides, polyether ketones, polyether ether ketones, ABS resins, polystyrenes, polybutadiene, polyacrylates, polyacrylonitrile, polyacetals, polycarbonates, polyphenylene ethers, ethylene-vinyl acetate copolymers, polyvinyl acetate, liquid crystal polymers, ethylene-tetrafluoroethylene copolymer, aromatic polyesters, polyvinyl fluoride, polyvinylidene fluoride, polyvinylidene chloride, tetrafluoroethylene, and mixtures, copolymers, reaction products, and composites comprising at least one of the foregoing thermoplastics.

7. A limited play optical storage media as in claim 5, wherein said thermoplastic comprises polycarbonate.

8. A limited play optical storage media as in claim 1, wherein said barrier layer is selected from the group consisting of acrylates, silicon hardcoats, parylene, polyester urethanes, poly(vinylidene) chloride and copolymers thereof, acrylated melamine resins, polyamine/polyepoxides, poly(vinyl alcohol), ethylene-vinyl alcohol copolymer, partially hydrolyzed poly(vinyl acetate), epoxies, thiol-enes, polyesters, silicones, melamines, polyacetates, poly(vinyl alcohols) metal oxides, metal nitrides, metal oxinitrides, and combinations thereof.

9. A limited play optical storage media as in claim 8, wherein said barrier coating comprises thermal cross linked acrylates.

10. A limited play optical storage media as in claim 8, wherein said barrier coating comprises diacrylate, a triacrylate, N-vinyl pyrrolidone, styrene, and combinations therof.

11. A limited play optical storage media as in claim 1, wherein said reactive layer further comprises a reactive material selected from the group consisting of oxygen sensitive leuco methylene blue, reduced forms of methylene blue, brilliant cresyl blue, basic blue 3, toluidine 0, and combinations comprising at least one of the foregoing reactive materials.

12. A limited play optical storage media as in claim 1, wherein said reactive layer further comprises polymethylmethacrylate/leuco methylene blue.

13. A limited play optical storage media as in claim 1, wherein said reactive layer further comprises about 0.1 wt % to about 10 wt % reactive material, based upon a total weight of said reactive layer.

14. A limited play optical storage media as in claim 13, wherein said reactive layer further comprises about 3 wt % to about 7 wt % reactive material, based upon a total weight of said reactive layer.

15. A limited play optical storage media as in claim 14, wherein said reactive layer further comprises about 4 wt % to about 6 wt % reactive material, based upon a total weight of said reactive layer.

16. A limited play optical storage media as in claim 1, wherein said reactive layer further comprises a carrier selected from the group consisting of thermoplastic acrylic polymers, polyester resins, epoxy resins, polythiolenes, UV curable organic resins, polyurethanes, thermosettable acrylic polymers, alkyds, vinyl resins, and reaction products and combinations comprising at least one of the foregoing carriers.

17. A limited play optical storage media as in claim 1, wherein said subsequent percent reflectivity is about 30% or less.

18. A limited play optical storage media as in claim 1, wherein said reactive layer acts as an adhesive adhering the reflective layer to the second substrate.

19. A limited play optical storage media as in claim 1 wherein the second substrate and the barrier layer combined have an oxygen permeability in a range between about 0.01 Barrers and about 1.35 Barrers at 25°C.

20. A limited play optical storage media, comprising:

a first substrate;

at least one reflective layer;

a data storage layer disposed between said first substrate and said at least one reflective layer;

a reactive layer disposed on said at least one reflective layer, said reactive layer comprising polymethylmethacrylate/ leuco methylene blue; and

an optically transparent second substrate disposed between the reactive layer and a laser incident surface of the optical storage media; and

an oxygen permeable barrier layer disposed between the reactive layer and a laser incident surface of the optical storage media,

said reactive layer having an initial percent reflectivity of about 50% or greater and a percent reflectivity of about 45% or less after exposure to oxygen.

21. A limited play optical storage media as in claim 20 wherein the second substrate and the barrier layer combined have an oxygen permeability in a range between about 0.01 Barrers and about 1.35 Barrers at 25°C.

22. A method for limiting access to data disposed on a data storage media, comprising:

directing a light towards at least a portion of said data storage media, wherein at least a portion of said light passes through a barrier layer, an optically transparent second substrate, and a reactive layer, to reach a reflective layer applied to a first substrate having a data storage layer therebetween;

reflecting at least a portion of said light back through said first substrate, said reactive layer, said second substrate, and said barrier layer; and

reducing the percent reflectivity of said reactive layer to less than about 45% after exposure to oxygen.

23. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of reducing the percent reflectivity of said reactive layer results in a percent reflectivity about 30% or less.

24. A method for limiting access to data disposed on a data storage media as in claim 23, wherein the step of reducing the percent reflectivity of said reactive layer results in a percent reflectivity about 20% or less.

25. A method for limiting access to data disposed on a data storage media as in claim 24, wherein the step of reducing the percent reflectivity of said reactive layer results in a percent reflectivity about 15% or less.

26. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a first substrate and a second substrate comprising a thermoplastic selected from the group consisting of polyvinyl chloride, polyolefins, polyesters, polyamides, polysulfones, polyimides, polyetherimides, polyether sulfones, polyphenylene sulfides, polyether ketones, polyether ether ketones, ABS resins, polystyrenes, polybutadiene, polyacrylates, polyacrylonitrile, polyacetals, polycarbonates, polyphenylene ethers, ethylene-vinyl acetate copolymers, polyvinyl acetate, liquid crystal polymers, ethylene-tetrafluoroethylene copolymer, aromatic polyesters, polyvinyl fluoride, polyvinylidene fluoride, polyvinylidene chloride, tetrafluoroethylene, and mixtures, copolymers, reaction products, and composites comprising at least one of the foregoing thermoplastics.

27. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a first substrate and a second substrate comprising a polycarbonate.

28. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a barrier layer selected from the group consisting of acrylates, silicon hardcoats, parylene, polyester urethanes, poly(vinylidene) chloride and copolymers thereof, acrylated melamine resins, polyamine/polyepoxides, poly(vinyl alcohol), ethylene-vinyl alcohol copolymer, partially hydrolyzed poly(vinyl acetate), epoxies, thiol-enes, polyesters, silicones, melamines, polyacetates, poly(vinyl alcohols) metal oxides, metal nitrides, metal oxinitrides, and combinations thereof.

29. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a reactive layer further comprising a reactive material selected from the group consisting of oxygen sensitive leuco methylene blue, reduced forms of methylene blue, brilliant cresyl blue, basic blue 3, toluidine 0, and combinations comprising at least one of the foregoing reactive materials.

30. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a reactive layer further comprising polymethylmethacrylate/leuco methylene blue.

31. A method for limiting access to data disposed on a data storage media as in claim 22, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a reactive layer further comprising about 0.1 wt % to about 10 wt % reactive material, based upon a total weight of said reactive layer.

32. A method for limiting access to data disposed on a data storage media as in claim 31, wherein the step of directing a light towards at least a portion of said data storage media involves directing light towards a data storage media containing a

reactive layer further comprising about 3 wt % to about 7 wt % reactive material, based upon a total weight of said reactive layer.